# 16. Multinational Capital Budgeting

● *Capital budgeting is the process of identifying, evaluating, and implementing a firm's investment opportunities.*

● *Multinational capital budgeting,* like traditional domestic capital budgeting, focuses on the cash inflows and outflows associated with prospective long-term (foreign) investment projects. *Multinational capital budgeting* has the same theoretical framework as domestic capital budgeting

Five Steps Involved In The Capital Budgeting Process

1. Proposal Generation

2. Review and Analysis

3. Decision Making

4. Implementation

5. Follow-Up
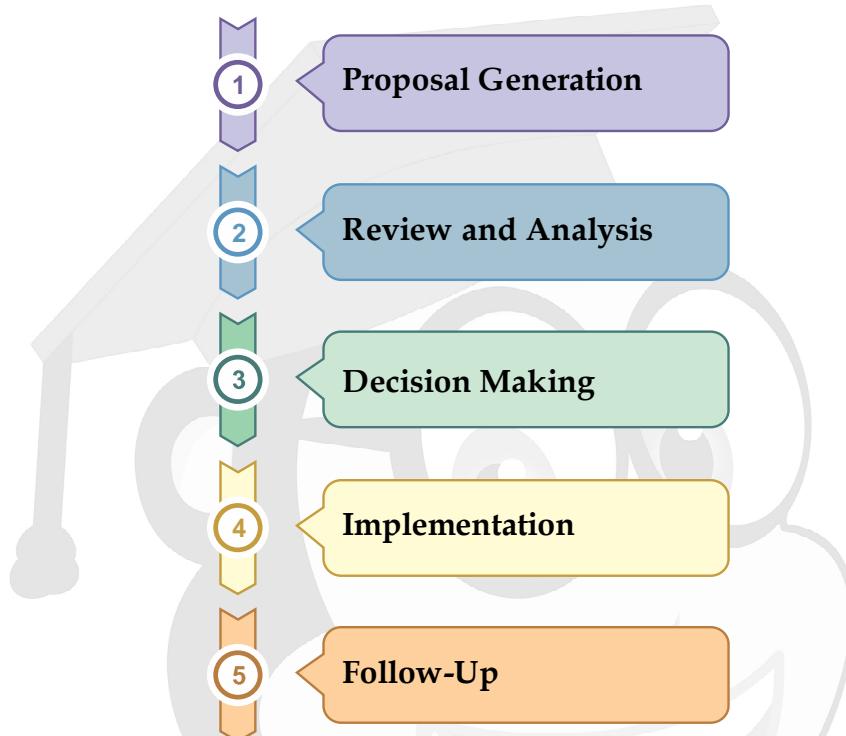
1. Proposal Generation : Proposal generation is the origination of proposed capital projects for the firm by individuals at various levels of the organization.

2. Review and Analysis : Review and analysis is the formal process of assessing the appropriateness and economic viability of the project in light of the firm's overall objectives. This is done by developing cash flows relevant to the project and evaluating them through capital budgeting techniques. Risk factors are also incorporated into the analysis phase.

3. Decision making : Decision making is the step where the proposal is compared against predetermined criteria and either accepted or rejected.

4. Implementation : Implementation of the project begins after the project has been accepted and funding is made available.

5. Follow-up : Follow-up is the post-implementation audit of expected and actual costs and revenues generated from the project to determine if the return on the proposal meets pre implementation projections.

Input for Multinational Capital Budgeting

1. Initial investment
2. Consumer demand

3.   Product price

4.   Variable cost

5.   Fixed cost

6.   Project lifetime

7.   Salvage (liquidation) value

8.   Fund-transfer restrictions

9.   Tax laws

10.   Exchange rates

11.   Required rate of return

Calculation of Multinational Capital Budgeting

Capital budgeting is necessary for all long-term projects that deserve consideration.

One common method of performing the analysis is to estimate the cash flows and salvage value to be received by the parent, and compute the *net present value (NPV)* of the project.

Multinational corporations (MNCs) evaluate international projects by using multinational capital budgeting, which compares the benefits and costs of these projects. *Multinational capital budgeting involves determining the project's net present value by estimating the present value of the project's future cash flows and subtracting the initial outlay required for the projects.* Some special circumstances of international projects that affect the future cash flow or the discount rate used to discount cash flow make multinational capital budgeting more complex

Why Multinational capital budgeting?

- Many international projects are irreversible and cannot be easily sold to other corporations at a reasonable price

- Proper use of multinational capital budgeting can identify the international projects worthy of implementation.

- It affects the profitability of a firm.

- It effect over a long time spans and inevitably affects the company's future cost structure.

- Capital investment decision once made, are not easily reversible without much financial loss of firm

- It involves cost and the majority of the firms have scarce capital sources.

Factors to Consider in Multinational Capital Budgeting

1.   **Exchange Rate Fluctuations :** Different scenarios should be considered together with their probability of occurrence.

2.   **Inflation :** Although price/cost forecasting implicitly considers inflation, inflation can be quite volatile from year to year for some countries.

3.   **Financing Arrangement :** Financing costs are usually captured by the discount rate. However, many foreign projects are partially financed by foreign subsidiaries.

4.   **Blocked Funds :** Some countries may require that the earnings be reinvested locally for a certain period of time before they can be remitted to the parent.

5. **Uncertain Salvage Value :** The salvage value typically has a significant impact on the project's NPV, and the MNC may want to compute the break-even salvage value.

6. **Impact of Project on Prevailing Cash Flows :** The new investment may compete with the existing business for the same customers.

7. **Host Government Incentives :** These should also be considered in the analysis.

Multinational Capital Budgeting Formula

Focus Formula
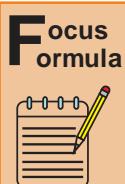
$$NPV = \left(\frac{CF_1}{(1+i)^1} + \frac{CF_2}{(1+i)^2} + \frac{CF_3}{(1+i)^3} + ... + \frac{CF_n}{(1+i)^n} \right) + \frac{SV}{(1-i)^n} - CF_0$$

where NPV = Net Present Value
i = the required rate of return on the project
n = project lifetime in terms of periods
SV = Salvage Value
CF_0 = Initial investment (cash outlay)
CF_1 = Cash Flow of year one
CF_2 = Cash Flow of year Two
If $NPV > 0$, the project can be accepted.

Example : Brower, Inc. just constructed a manufacturing plant in Ghana. The construction cost 9 billion Ghanian cedi. Brower intends to leave the plant open for three years. During the three years of operation, cedi cash flows are expected to be 3 billion cedi, 3 billion cedi, and 2 billion cedi, respectively. Operating cash flows will begin one year from today and are remitted back to the parent at the end of each year. At the end of the third year, Brower expects to sell the plant for 5 billion cedi. Brower has a required rate of return of 17 percent. It currently takes 8,700 cedi to buy one U.S. dollar, and the cedi is expected to depreciate by 5 percent per year.

(a) Determine the NPV for this project. Should Brower build the plant?

(b) How would your answer change if the value of the cedi was expected to remain unchanged from its current value of 8,700 cedis per U.S. dollar over the course of the three years? Should Brower construct the plant then?

1 Billion = 1000 million = 1000 million × 10 Lac = 100 Crore

Solution : (a) :

Year	0	1	2	3	3 SV
CR (Cedi)	−9000000000	3000000000	3000000000	2000000000	5000000000
Exchange Rate (Cedi /$)	8700	9135	9592	10071	10071
Cash Flow to Parent ($)	−$1034483	$328,407.23	$312,760.63	$198,590.01	$496,475.03

$$NPV = \left(\frac{CF_1}{(1+i)^1} + \frac{CF_2}{(1+i)^2} + \frac{CF_3}{(1+i)^3} \right) + \frac{SV}{(1+i)^n} - CF_0$$

$$NPV = \left(\frac{\$328407.23}{(1+17\%)^1} + \frac{\$312760.63}{(1+17\%)^2} + \frac{\$198590.01}{(1+17\%)^3} \right) + \frac{\$496475.03}{(1+17\%)} - \$1034483$$

= ($280689.94 + $228475.89 + $123993.76) + $309984.39 – $1034483

= $943143.98 – $1034483 = –$91339.02

Since the project has a **negative** net present value (NPV), Brower should not undertake it.

Solution (b) :

Year	0	1	2	3	3 SV
CR (Cedi)	–9000000000	3000000000	3000000000	2000000000	5000000000
Exchange Rate (Cedi /$)	8700	8700	8700	8700	8700
Cash Flow to Parent ($)	–$1034483	$344,827.59	$344,827.59	$229,885.06	$574,712.64

$$NPV = \left(\frac{CF_1}{(1+i)^1} + \frac{CF_2}{(1+i)^2} + \frac{CF_3}{(1+i)^3} \right) + \frac{SV}{(1+i)^n} - CF_0$$

$$NPV = \left(\frac{\$344827.59}{(1.17\%)^1} + \frac{\$344827.59}{(1+17\%)^2} + \frac{\$229885.06}{(1+17\%)^3} \right) + \frac{\$574712.64}{(1+17\%)^3} - \$1034483$$

= ($294724.44 + $251901.23 + $143533.46) + $358833.65 – $1034483

= $1048992.78 – $1034483

= $14509.78

Since the project has a **positive** net present value (NPV), Brower should undertake it.

✎ 📖 Key Points & Revision Summary 📖 ✎

- *Financial Management* is the planning, organizing, directing and controlling of the procurement and utilization of fund and it relates mainly with the control of performance, acquisition of funds, profitable use of these funds, planning for future activities and use suitable method such as financial accounting, cost accounting, budgeting, statistics etc.
- *Objectives of Financial Management*
  1. *Profit Maximization*
  2. *Wealth Maximization*
- *Scope of Business Finance*
  1. *Investment Decision*
  2. *Financing Decision*
  3. *Dividend Decision*
  4. *Working Capital Decision*
- *Lease Financing :* Lease financing is one of the important sources of medium- and long-term financing where the owner of an asset gives another person, the right to use that asset against periodical payments.
  Different Types of Lease
  1. *Finance Lease*
  2. *Operating Lease*
- *Capital Structure :* Capital Structure ordinarily implies the proportion of Debt and equity in the total of the company.
  Capital Structure Theories
  1. *Net Income Approach (NI Approach)*
  2. *Net operating Income Approach (NOI Approach)*
  3. *Traditional Approach*
  4. *MM Approaches*
- *Types of Leverage*
  1. *Operating Leverage*
  2. *Financial Leverage*
  3. *Combined Leverage*
- *Cost of Capital :* Cost of capital is defined as minimum rate of return that a firm must earn on its investment for market value of the firm to remain unchanged.
  Determining Components Costs of Capital
  1. *Cost of Debts (K_d)*
  2. *Cost of Preference Share (K_p)*
  3. *Cost of Equity Share Capital (K_e)*
  4. *Cost of Retain Earning (K_r)*
  5. *Weighted Average Cost of Capital (K_w)*

✎ 📖 Key Points & Revision Summary 📖 ✎

- *Capital Budgeting :* *Capital Budgeting are the decisions relating to proposed long term capital outlays. It is a formal process undertaken by the firm to efficiently invest funds in long term activities in anticipation of expected flow of future benefits over several years.*

  Capital Budgeting Techniques :

  (I) Traditional or Non-Discounted Cash Flow Techniques

  1. *Payback Period*
  2. *Accounting Rate of Return (ARR)*

  (II) Modern or Discounted Cash Flow Methods

  1. *Net Present Value Method*
  2. *Internal Rate of Return (IRR)*
  3. *Profitability Index (PI) or Present Value Index Method*
  4. *Discounted Payback Period*

- *Working Capital Management :*

  Types of Working Capital :

  1. **Balance Sheet View Point**
     - (a) *Gross Working Capital (Broader Sense)*
     - (b) *Net Working Capital (Narrower Sense)*
  2. **On the Basis of Time**
     - a) *Permanent Working Capital*
     - b) *Temporary Working Capital*

  Working Capital Forecasting Methods

  1. *Percentage of Sales Method*
  2. *Regression Analysis Method*
  3. *Operating Cycle Method*
  4. *Forecasting Net Current Assets Method*
  5. *Projected Balance Sheet Method*
  6. *Adjusted Profit and Loss Method*

- *Cash Management :*

  Dimensions of Cash Management

  1. *Cash Planning and Forecasting*
     - (a) *Cash Budget*
     - (b) *Cash Flow Statement*
     - (c) *Ratio Analysis*
  2. *Managing the Cash Flows*
     - (a) *Managing Cash Inflows*
     - (b) *Managing Cash Outflows*

  Cash Management Models

  (i) *Baumol or Economic Order Quantity (EOQ) Model*

  (ii) *Stochastic or Miller-Orr Model*

✎📖 Key Points & Revision Summary 📖 ✎

● **Dividend Policy :** Dividend policy determines what portion of earnings will be paid out to stock holders and what portion will be retained in the business to finance long-term growth.

Different Types of Dividend Policies and Determination

(i) Stable or Regular Dividend Policy Theory

(ii) Policy of Regular plus Extra Dividend

(iii) Policy of Regular Bonus Dividend

(iv) Policy to Pay Irregular Dividend

(v) Policy of No Immediate Dividend

Dividend Models

(i) Walter Model

(ii) Gordon's Model

(iii) Modigliani and Miller Model (M-M Model)

Theories of Profit :

1. Rent Theory of Profit

2. Wage Theory of Profit

3. Risk Theory of Profit

4. The Dynamic Theory of Profit

5. Schumpeter's Innovation Theory

6. Uncertainty Bearing Theory of Profit

7. Marginal Productivity Theory of Profit

● **International Monetary System :** International monetary system refers to the system prevailing in world foreign exchange markets through which international trade and capital movement are financed and exchange rates are determined.

● **Foreign Exchange Market :** The foreign exchange market is the market in which participants are able to buy, sell, exchange and speculate on currencies.

● **International Financial Markets :** The international financial market is the worldwide marketplace in which buyers and sellers trade financial assets, such as stocks, bonds, currencies, commodities and derivatives, across national borders.

● **International Arbitrage :** International Arbitragers play a critical role in facilitating exchange rate equilibrium. They try to earn a risk-free profit whenever there is exchange rate disequilibrium.

> Success is the Sum of Small Efforts, Repeated Day In and Day Out.
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> **Robert Collier**

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